3.12 AIR QUALITY

3.12.1 AREA OF ANALYSIS AND METHODOLOGY

The analysis area for air quality resources is divided into two parts. Construction impacts for on-site and off-site emissions are assessed for the ROW and all access roads at a local level. This also includes an analysis of any potential air quality impacts to close sensitive receptors just outside the ROW. Long-term air quality impacts are assessed at a regional level. These impacts would result from operation of the project and result in a potential impact at the regional level and contribute to measured concentrations of criteria pollutants. All impacts are assessed in relation to federal thresholds applicable to this area.

REGULATORY FRAMEWORK

Nevada's air quality is regulated by several jurisdictions including the U.S. Environmental Protection Agency (EPA), and the state agency referred to as the Bureau of Air Quality (BAQ). Each of these jurisdictions develop rules, regulations, policies, and/or goals to attain the goals or directives imposed upon them through legislation. Although EPA regulations may not be superseded, the state regulations may be more stringent.

Pollutants subject to federal ambient standards are referred to as "criteria" pollutants because the EPA publishes criteria documents to justify the choice of standards. One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed "sensitive receptors." The term sensitive receptors refers to specific population groups, as well as the land uses where they would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses are residences, schools, playgrounds, childcare centers, retirement homes or convalescent homes, hospitals, and clinics. The federal and state standards for the criteria pollutants and other state-regulated air pollutants are shown in Table 3.12-1.

Federal Air Quality Regulations

The federal 1970 Clean Air Act authorized the establishment of national health-based air quality standards, and also set deadlines for their attainment. The federal Clean Air Act Amendments of 1990 (1990 CAAA) made major changes in deadlines for attaining National Ambient Air Quality Standards (NAAQS) and in the actions required of areas of the nation that exceeded these standards. The 1990 CAAA require designated agencies in any area of the nation that does not meet the NAAQS to prepare a plan demonstrating the steps to bring the area into compliance. The 1990 CAAA completely revised the federal statute. They provide a new timeframe for achieving attainment of NAAQS and a new set of guidelines and planning processes for carrying out the requirements of the Amendments. Provisions of Section 182, which relates to O_3 nonattainment areas, and Section 187, which relates to CO nonattainment areas, emphasize strategies for reducing vehicle miles traveled. Section 182 requires submission of a plan revision that "identifies and adopts specific enforceable transportation control measures to offset any growth in emissions from growth in vehicle miles traveled or number of vehicle trips in such an area to meet statutory requirements for demonstrating periodic emission reduction requirements." The 1990 CAAA require that projects receiving federal funds demonstrate conformity to the approved State Implementation Plan (SIP)/local air quality attainment plan for the region.

The 1990 CAAA require federal agencies to ensure that their actions are consistent with the Clean Air Act and with federally enforceable air quality management plans (e.g., State Implementation Plans). The conformity assessment process is intended to ensure that federal agency actions: (1) will not cause or contribute to new violations of NAAQS; (2) will not increase the frequency or severity of any existing

violations of ambient air quality standards; and (3) will not delay the timely attainment of ambient air quality standards.

TABLE 3.12-1: AMBIENT AIR QUALITY STANDARDS

NEVADA[1]		NATIONAL[2]	
Air Pollutant	**Concentration**	**Primary (>)**	**Secondary (>)**
Ozone Ozone-Lake Tahoe Basin #90	0.12 ppm, 1-hr avg 0.10 ppm 1-hr avg	0.12 ppm, 1-hr avg -	0.12 ppm, 1-hr avg -
Carbon Monoxide less than 5,000 ft above Mean Sea Level	9 ppm, 8-hr avg	9 ppm, 8-hr avg	none
Carbon Monoxide at or greater than 5,000 ft Mean Sea Level	6.0 ppm 8-hr avg	9 ppm, 8-hr avg	none
Carbon Monoxide at any elevation	35 ppm 1-hr avg	35 ppm 1-hr avg	none
Nitrogen Dioxide	.05 ppm annual avg	0.053 ppm, annual avg	0.053 ppm, annual avg
Sulfur Dioxide	.03 ppm, annual avg 0.14 ppm, 24-hr avg 0. 5 ppm, 3-hr avg	0.03 ppm, annual avg 0.14 ppm, 24-hr avg	0.50 ppm, 3-hr avg
Suspended Particulate Matter (PM_{10})	50 $\mu g/m^3$ annual arithmetic mean 150 $\mu g/m^3$, 24-hr avg	50 $\mu g/m^3$ annual arithmetic mean 150 $\mu g/m^3$, 24-hr avg	50 $\mu g/m^3$ annual arithmetic mean 150 $\mu g/m^3$, 24-hr avg
Lead	1.5 $\mu g/m^3$, calendar quarter	1.5 $\mu g/m^3$, calendar quarter	1.5 $\mu g/m^3$, calendar quarter
Hydrogen Sulfide	0.08 ppm, 1-hr avg	--	--

[1] These standards must not be exceeded in areas where the general public has access.

[2] National standards, other than ozone and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.

ppm = parts per million by volume

$\mu g/m^3$ = micrograms per cubic meter

Source: Nevada Division of Environmental Protection, 1999.

Federal thresholds depend on whether or not an area is in attainment of NAAQS and, if not, then what designated level of non-attainment. The thresholds are more stringent for areas not in attainment and labeled severe or serious. The thresholds are a bit more generous for areas in attainment. The applicable emissions thresholds change whenever an area is redesignated. Two types of NAAQS have been established: (1) primary standards, which protect public health; and (2) secondary standards, which protect public welfare from non-health-related adverse effects such as visibility reduction.

State Air Quality Regulations

Both federal and state air quality regulations are implemented and enforced in Nevada by designated air quality management districts. Most of the state is under the jurisdiction of the Bureau of Air Quality, except for Clark and Washoe counties. These two counties fall under the jurisdiction of the Clark County Health District and the Washoe County District Health Department, respectively. The project sites and path fall under the jurisdiction of the BAQ. The BAQ is responsible for, but not limited to, the following in regards to air quality:

- Implementing and enforcing state and federal regulations to prevent, abate, and control air pollution from all stationary and temporary sources;
- Regulating facilities throughout the state which generate electricity using steam produced by the burning of fossil fuels;

- Issuing air quality operating permits;
- Implementing an alternative fuels program for public agency fleets with more than ten vehicles;
- Conducting investigations, research, and technical studies; and
- Monitoring ambient air quality.

Air quality in Nevada is also subject to Nevada's Revised Statute 445B.100. This statute states:

> It is the public policy of the State of Nevada…to achieve and maintain levels of air quality which will protect human health and safety, prevent injury to plant and animal life, prevent damage to property, and preserve visibility and scenic, aesthetic and historic values of the state.

It is the responsibility of the BAQ to make sure that this statute is enforced.

3.12.2 AFFECTED ENVIRONEMNT

Air quality in a region is determined by its topography, meteorology, and existing air pollutant sources. These factors are discussed below.

CLIMATE AND METEOROLOGY

Ambient air quality is commonly characterized by climatological conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. The project is located in the northeastern region of Nevada, specifically in Elko, Eureka, Lander, and White Pine counties. The following section describes pertinent characteristics of this area and provides an overview of the physical conditions affecting pollutant dispersion.

Regional Climate

The project area is located in the northeastern portion of the State of Nevada. The 345 kV transmission line would connect the Falcon and Gonder substations. The Falcon substation lies approximately 40 miles west of Elko within Eureka County. The Gonder substation lies approximately 10 miles northeast of Ely within White Pine County. The region is characterized by a relatively simple terrain consisting of moderate mountain ranges separated by expanses of flat topography. Nevada is bounded on the west by the Sierra Nevada Mountains, which suppress maritime climate effects due to the Pacific Ocean.

The regional climate is a desert, continental-type climate. Surrounding mountains shield the area from arctic cold masses from the north and maritime effects from the west. Winters are characterized as moderately cold with notable amounts of snowfall. Summers are also moderate with occasional light rainfall.

Moderate temperatures characterize the project area, with annual average high temperatures of 65 degrees Fahrenheit (ºF) at the Ely climatological station, the closest station to the Gonder substation. Average daytime high temperatures range from near 90ºF in July to 40ºF in January. Average overnight low temperatures range from 50ºF in July to 10ºF in January. Depending on the season, precipitation varies greatly in the project area. Daily mean rainfall ranges from 6 inches in spring to less than 1 inch in July and occurs almost year round. Snowfall occurs from October to late May, with daily means of 3.5 inches in December (DRI 2000). These observed data are from the Ely climatological station and do not vary significantly for the Elko station located about 120 miles north.

Winds across the project area are an important meteorological parameter because they control the dilution of locally generated air pollutant emissions and their regional trajectory. Southwest winds are predominant at the Elko station almost year round. Mean wind speeds range from 5 mph to 7 mph at this site. South winds dominate at the Ely station, with mean wind speeds of 10 mph.

Meteorological Influences on Air Quality

Regional flow patterns affect air quality patterns by directing pollutants downwind of sources. Localized meteorological conditions, such as moderate winds, disperse pollutants and reduce pollutant concentrations. When a warm layer of air traps cooler air close to the ground, an inversion layer is produced. Such temperature inversions hamper dispersion by creating a ceiling over the area and trapping air pollutants near the ground.

CRITERIA AIR POLLUTANTS

Currently, efforts to improve air quality in the United States are focused on the control of five pollutants, called "criteria" air pollutants: photochemical oxidants (ozone), carbon monoxide (CO), particulate matter (PM_{10}), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). Fifteen years ago, suspended particulate lead would have been included in this list, but the widespread availability and use of unleaded gasoline has effectively eliminated lead as an air quality concern. Criteria pollutants, including their formation and health effects, are discussed below.

Ozone

Ozone (O_3) is a colorless gas with a pungent odor that causes eye irritation and respiratory function impairment. Most O_3 in the atmosphere is formed as a result of the interaction of ultraviolet light, reactive organic gasses (ROG), and NO_X. ROG is composed of non-methane hydrocarbons, and NO_X consists of chemical combinations of nitrogen and oxygen, mainly NO and NO_2. Motor vehicles are the primary source of ROG and NO_X. Since both reactants can be transported over long distances from their sources, ozone is considered a regional pollutant.

Volatile Organic Compounds (VOCs)

Reactive organic gases, also know as volatile organic compounds (VOCs), are compounds containing hydrogen, carbon, and possibly other elements. In the presence of sunlight and nitrogen oxides, these compounds react to form ground-level ozone. Vehicles, solvent use, gasoline evaporation, and industrial processes are common sources of VOCs.

Fine Particulate Matter (PM_{10})

PM_{10} is atmospheric particles resulting from fume-producing industrial and agricultural operations, as well as natural activities. Health impacts from breathing the particulates resulted in revision of the Total Suspended Particulate (TSP) standard to reflect particulates that are small enough to be inhaled (i.e., 10 microns or less in size). Current standards define acceptable concentrations of particulates that are smaller than 10 microns in diameter, referred to as PM_{10}. PM_{10} includes materials such as sulfates and nitrates, which can cause lung damage.

Carbon Monoxide

Carbon monoxide (CO) is an odorless, colorless gas that causes a number of health problems including fatigue, headache, confusion, and dizziness. The incomplete combustion of petroleum fuels in on-road vehicles is a major cause of CO. Wood-burning stoves and fireplaces are another source of CO. This pollutant tends to dissipate rapidly into the atmosphere; consequently, violations of the CO state standard are generally limited to major intersections during peak hour traffic conditions.

Nitrogen Dioxide

Nitrogen dioxide (NO_2) is an indirect product of fuel combustion in industrial sources, motor vehicles, and other mobile sources (e.g., off-road vehicles, trains, aircraft, mobile equipment, and utility equipment). NO_2 causes a number of health problems including risk of acute and chronic respiratory disease.

Sulfur Dioxide

The major source of SO_2 emissions is fuel-burning equipment in which fuel oil and/or coal are consumed. SO_2 causes a number of health problems including aggravation of chronic obstructive lung disease. Construction and/or operation of the Falcon to Gonder project would result in a very negligible amount of SO_2; it is therefore not discussed further in this section.

EXISTING AIR QUALITY MONITORING DATA

Air pollutant concentrations are measured at monitoring stations throughout the state. However, the stations are primarily used to assess population exposure, and the measurements are taken close to urban centers or busy roadways. Baseline air quality in the project area can be inferred from ambient air quality measurements conducted at Elko, Carson City, and Stateline. The Elko station contains PM_{10} measurements dating back to 1992. The Carson City and Stateline stations are located approximately 300 miles west of Ely. The Carson City station contains carbon monoxide and ozone data. The Stateline station contains nitrogen dioxide measurement data. Both the Stateline and Carson City monitoring stations are located a fair distance from the project area. These stations are located in more densely populated areas and would provide a conservative indication of the air quality expected at the project area between Elko and Ely. As shown in Table 3.12-2, station data indicate that there have been no exceedences of either federal of state air quality standards in the project area for the period of analysis (i.e., 1996-1998).

Attainment of carbon monoxide federal and state ambient air quality standards are measured for both 1-hour and 8-hour average periods. Thus, "0/0" indicates that the CO 1-hour threshold was exceeded 0 days out of the year and the CO 8-hour threshold was exceeded 0 days. The parenthesis following "State Standard" and "Federal Standard" under carbon monoxide (Table 3.12-2) indicates that the first number corresponds to the 1-hour standard and the second number corresponds to the 8-hour average standard (1-hr/8-hr avg.).

SENSITIVE RECEPTORS

The term "sensitive receptor" refers to specific population groups, as well as the land uses where they would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses are residences, schools, playgrounds, childcare centers, retirement homes or convalescent homes, hospitals, and clinics.

To identify potential sensitive receptors that could be impacted by project air emissions, a land use survey was conducted by Stantec in July 2000 using a helicopter and global positioning system. This survey identified approximately 30 buildings (mostly residences) within 1,000 feet and 280 buildings within 1.5 miles of the Crescent Valley (a) route (as measured from the proposed centerline). The Crescent Valley (b) route has approximately 34 buildings within 1,000 feet and 355 buildings within 1.5 miles. The Pine Valley (a) route has approximately 18 buildings within 1,000 feet and 213 units within 1.5 miles, while the Pine Valley (b) route has about 22 within 1,000 feet and 288 units within 1.5 miles. The Buck Mountain route has about 14 buildings within 1,000 feet and 173 buildings within 1.5 miles. Segments A, B, H, I, and J are the only ones with homes within 1,000 feet of the centerline (Stantec 2000). Other sensitive receptors such as schools, churches, and hospitals are not found within 1.5 miles of the ROW.

EXISTING ATTAINMENT STATUS

Air quality attainment status is determined by comparing actual monitoring data with state and federal standards. If a pollutant concentration is lower than the standard, the pollutant is classified as "attainment" in that area. If an area exceeds the standard, the pollutant is classified as "non-attainment." If data are insufficient to determine whether or not the standard is exceeded, the area is designated "unclassified." A "maintenance area" for a given pollutant refers to an area that is in attainment for the pollutant and there exists an approved State Implementation Plan that would keep pollutant levels from exceeding the NAAQS.

White Pine County and Elko County are currently designated as federal maintenance areas for all criteria pollutants. Title 40 of the Federal Code of Regulations establishes thresholds of 100 tons per year for each of those criteria pollutants (i.e., VOC, CO, PM_{10}, and NO_X) to be used in assessing general conformity under the Clean Air Act.

TABLE 3.12-2: SUMMARY OF ANNUAL NEVADA AIR QUALITY MONITORING DATA

POLLUTANT	1996	1997	1998
OZONE (O_3)[a]			
State Standard (1-hr avg, 0.12 ppm)			
Federal Standard (1-hr avg, 0.12 ppm)			
Maximum Concentration	0.08	0.09	0.08
Number of Days State Standard Exceeded	0	0	0
Number of Days Federal Standard Exceeded	0	0	0
NITROGEN DIOXIDE (NO_2)[b]			
State Standard (0.05 ppm AAM)			
Federal Standard (0.053 ppm AAM)			
Annual Mean	0.01	0.01	0.03
Number of Days State Standard Exceeded	0	0	0
Federal Standard Exceeded	No	No	No
CARBON MONOXIDE (CO)[c]			
State Standard (1-hr/8-hr avg, 35/9 ppm)[d]			
Federal Standard (1-hr/8-hr avg, 35/9 ppm)			
Maximum Concentration (1-hr/8-hr)	10.2/4.7	9.7/5.4	10.5/4.6

Number of Days State Standard Exceeded	0/0	0/0	0/0
Number of Days Federal Standard Exceeded	0/0	0/0	0/0
SUSPENDED PARTICULATES (PM_{10})[e]			
State Standard (24-hr avg, 150 g/m³)			
Federal Standard (24-hr avg, 150 g/m³)			
Maximum Concentration	119	52	103
Number of Samples Exceeding State 24-hr Standard	0	0	0
Number of Samples Exceeding Fed 24-hr Standard	0	0	0

a Data collected at Stateline monitoring station.
b 1996 and 1997 data collected at Stateline station, 1998 data collected at Reno monitoring station.
c Data collected at Carson City Long Street and Roberts House stations.
d State standard applied for sites located at less than 5,000 feet.
e Data collected from Elko monitoring station.
ppm : parts per million *AAM : annual arithmetic mean*
g/m³ : micrograms per cubic meter *NA : not available*

Source: Nevada Division of Environmental Protection, Air Quality Data, 1996,1997,1998.

CLASS 1 LANDS

Class 1 federal areas can be National Parks, National Wilderness Areas, and National Monuments. All Class 1 areas are given special air quality protection under the federal Clean Air Act. 40 CFR Section 51.307 requires the operator of any new major stationary source or major modification located within 100 kilometers (62 miles) of a Class 1 area to contact the federal land manager for the area and provide information on the source emissions and potential impacts to the Class 1 area.

Nevada contains one Class 1 designated area, the Jarbridge Wilderness Area in the northeastern corner of the state. The Falcon substation (the nearest project facility) lies over 125 miles to the southwest of this Class 1 area. As a result, no action has to be taken to contact the federal land manager since this project is considered a minor impact on the protected region.

3.12.3 ENVIRONMENTAL CONSEQUENCES

This section presents an analysis of the impacts and mitigation measures for temporary air quality impacts during construction. Fugitive dust and emissions from construction equipment exhaust are the main concern in evaluating short-term air quality impacts. Long-term impacts would be negligible since emission-related activities associated with operation of the project would be limited to periodic maintenance trips.

SIGNIFICANCE CRITERIA

For this analysis and in accordance with Federal Clean Air Act General Conformity Requirements, a significant air quality impact would occur if project generates emissions of:

- If NO_2, VOC, CO, or PM_{10} would exceed 100 tons per year for each pollutant.

ENVIRONMENTAL IMPACTS - COMPARISON OF ALTERNATIVES

Impacts Common to all Route Alternatives

Construction activities associated with the Falcon to Gonder project would temporarily generate NO_X, VOCs, CO, and PM_{10} emissions during clearing, grading, and general construction activities. Emissions would be generated during the clearing of vegetation and site grading for the towers. Additional

construction emissions would occur at the substations as those sites are being expanded, and during preparation of the right-of-way to access the tower sites. Within the ROW, some existing roads would be upgraded to include four wheel drive routes and two-track roads. Detailed construction activities for each of these project components are addressed below. The entire construction process is anticipated to last approximately 15 months.

Substation construction would begin with site clearing and grading. Reinforced concrete slabs would be installed to support the structure, equipment, and the control building. Trenches would have to be dug to place conduit, which would be used for electrical control cables. The trenches would be backfilled to the adjacent grade of the land. The control buildings would consist of pre-fabricated steel structures, as would all other shelters for housing electrical conductors, switches, and instrument transformers.

Along the route, the transmission lines would be supported by H-frame towers which require that two supporting steel poles be embedded in the ground. These structures would be partially assembled at material staging areas and delivered to the sites for final assembly and erection.

ROW preparation would provide access roads for the placement of the approximately 800 towers needed to support the transmission line from Falcon to Gonder. Existing roads would be upgraded through spading, widening, curve widening, tree removal, and adding turnouts. New roads would also be constructed as needed.

Emissions generated during the clearing of vegetation and excavation for the installation of the tower structures and ROW preparation would vary substantially from day to day depending on the level of activity, the specific construction activity, and weather conditions. Emissions associated with general construction activities include emissions resulting from the transport of workers, machinery and supplies, and emissions produced on-site during general building construction. Estimated construction emissions are summarized in Table 3.12-3.

The peak months of activity would include simultaneous ROW preparation, construction and placement of the transmission towers, and expansion at the substations. Results presented in Table 3.12-3 are based on the following assumptions: (1) no more than 4 acres of land would be disturbed in a day; and (2) all equipment runs for six hours per day during this peak period of construction, with the maximum number of employees on-site.

TABLE 3.12-3: CONSTRUCTION RELATED EMISSIONS (TONS/YEAR)

Pollutant	On-Site	Off-Site	Total
VOCs	5.7	0.3	6
NO_x	55.5	0.5	56
PM_{10}	44	<1	44
CO	35	1	36

As indicated, none of the construction-related emissions exceed the federal conformity limits of 100 tons per year. In addition to the low levels of emissions, the construction activities would be temporary and of short duration near any of the sensitive receptors; therefore, these emission levels would be a minor impact.

SPPC has already agreed to restore dirt roads requiring improvements to a condition as good or better than they were before project implementation. They have offered to implement erosion control measures on steep slopes, reseeding some areas, and closing some roads to discourage use and further generation of dust by vehicle travel. Long-term PM_{10} emissions are anticipated to be minimal.

Additionally, construction emissions are of short duration; therefore, construction activities would not degrade regional air quality. However, PM_{10} emissions generated from these activities may pose nuisance type problems for close residents. These nuisance type impacts include, but are not limited to, reduced visibility and dust settlement on vehicles or property.

❑ ***Impact Air-1: Construction-Related Air Emissions***

Construction activities associated with the transmission line would temporarily produce emissions of NO_X, VOCs, CO, and PM_{10}. Emissions would vary substantially from day to day, but the annual emissions would not exceed the annual federal thresholds. As a result, construction-related emissions would be considered a short-term minor impact.

❑ ***Mitigation Measure Air-1***

The following mitigation measures are recommended in addition to those proposed by SPPC to further limit PM_{10} impacts to any local residents:

(a) Water all active and accessible construction areas, excluding areas that are either inaccessible due to terrain or the location of sensitive resources, or are over two miles from any sensitive receptors. An alternative to watering is to apply non-toxic soil stabilizers. Watering requirements can be waived by the BLM's Compliance Inspector in areas covered with snow, if the soil is already saturated, or if there isn't substantial dust generated by construction vehicle traffic.

(b) Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard, which is the distance from the top of the truck bed to the material being hauled.

(c) Sweep streets (with water sweepers) if visible soil material is carried onto adjacent paved public streets.

(d) Hydroseed apply (non-toxic) soil stabilizers, or reclaim and revegetate inactive construction areas that are not scheduled for any further construction activity.

(e) Enclose, cover, and water or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc. over 50 cubic yards).

(f) Limit traffic speeds on unpaved access roads to the safe pre-construction speed limit as posted or determined by the highway patrol, county, or local users. Speeds along remote access roads and the centerline travel route should be reduced to prevent excessive amounts of construction related dust, as necessary.

(g) Replant vegetation in disturbed areas as stated in the COM Plan.

❑ ***Impact Air-2: Operational emissions associated with maintenance surveys of the lines and towers may produce CO, PM_{10}, NO_x, and VOC emissions***

Once a year on all segments, two linemen on all-terrain vehicles (ATVs) would patrol the transmission line and conduct maintenance surveys. The ATVs would require either gasoline or diesel fuel. Combustion of either of these fuels would generate emissions. PM_{10} may also be generated as the ATVs travel on unpaved roads. This would be a minor impact.

ATVs are either two-stroke or four-stroke engines, powered by either diesel fuel or gasoline. The two-stroke engines emit ten times more smog precursors per mile than the four-stroke engines. The 1990 Clean Air Act also requires these vehicles to use reformulated gasoline, thus reducing combustion-related emissions. It is anticipated that no more than two maintenance crew members would be out conducting line and tower surveys per year. Regardless of the type of engine and fuel consumption, the limited crew and number of the trips make this a negligible contribution to air quality and, therefore, a minor impact.

Travel on unpaved roads would also generate fugitive dust. The vehicle wheels would break-up the ground underneath, leaving this area susceptible to wind effects and turbulent wake effects from the tires passing over the area. The loosened material would be lofted into the atmosphere, degrading visibility and acting as a health hazard to any potential sensitive receptors in the area. There are also nuisance-type effects due to fugitive dust, such as settlement on nearby objects. The amount of fugitive dust generated correlates linearly with the volume of traffic on the road. Other factors include soil characteristics, such as silt content and moisture content. Since it is anticipated that there would be only two vehicles traveling the access roads once a year, this would be a minor impact. As no significant impacts are anticipated from the maintenance surveys, no mitigation measures are proposed or required.

Clean Air Act Conformity

The Clean Air Act Amendments of 1990 require federal agencies to ensure that their actions are consistent with the Clean Air Act and with federally enforceable air quality management plans (e.g., the State Implementation Plan). The conformity assessment process is intended to ensure that federal agency actions: (1) would not cause or contribute to new violations of NAAQS; (2) would not increase the frequency or severity of any existing violations of ambient air quality standards; and (3) would not delay the timely attainment of ambient air quality standards.

White Pine County and Elko County are currently designated as federal maintenance areas for all criteria pollutants. Title 40 of the Federal Code of Regulations establishes thresholds of 100 tons per year for each of those criteria pollutants (i.e., VOC, CO, PM_{10}, and NOx) to be used in assessing general conformity under the Clean Air Act. Implementation of the Falcon to Gonder project would result in short-term regional air quality impacts from construction activities. Table 3.12-3 lists the levels of pollutant emissions anticipated from this activity. They are all well below the 100 tons/year threshold. Operational impacts are expected to be minimal.

Based on the analysis of short-term construction and negligible long-term operational emissions, implementation of the project along any of the route alternatives would comply with the general conformity requirements of the Clean Air Act with respect to VOC, CO, PM_{10}, and NO_x. As the Falcon to Gonder project would conform to all requirements of the Clean Air Act, no mitigation measures are proposed or required.

Gaseous Effluents

Corona activity on electrical conductors surrounded by air can produce very tiny amounts of gaseous effluents: ozone and NO_x. Ozone is a naturally occurring part of the air, with typical rural ambient levels around 10 to 30 parts per billion (ppb) at night and peaks of 100 ppb and higher (EPRI 1982:199). In urban areas, concentrations greater than 100 ppb are common. After a thunderstorm the air may contain 50 to 150 ppb of ozone, and levels of several hundred ppb have been recorded in large cities and in commercial airliners. Ozone is also given off by welding equipment, copy machines, air fresheners, and many household appliances. During wet weather, corona activity on 345 kV transmission lines may also produce very tiny amounts of ozone in the region next to the conductors.

The National Ambient Air Quality Standard for Oxidants is 120 parts-per-billion (ppb), not to be exceeded as a peak one-hour concentration on more than one day a year (the standard for NO_2 is 140 ppb). Ozone is the primary photochemical oxidant, representing 90-95% of the total. In general, the most sensitive ozone measurement instrumentation can measure about 1 ppb. Ozone calculations were performed using a computer program originally developed by the Bonneville Power Administration (BPA 1977). The calculated maximum concentration of ozone at ground level for the proposed 345 kV transmission line during heavy rain is about 1 ppb (and NO_x is even smaller). It is possible that a level this small could not be measured without special efforts, as it is over 100 times less than the National Ambient Air Quality Standard, and far less than ambient levels of 30-50 ppb and up to 150 ppb after thunderstorms (EPRI 1982: 199). Therefore, the proposed 346 kV transmission line would not create adverse effects in the ambient air quality of the project area.

Alternative-Specific Impacts

All potential adverse impacts are addressed in the previous section (i.e., Impacts Common to All Route Alternatives). As noted, all impacts associated with the project are considered minor and will be mitigated to less-than-significant levels. An analysis of potential minor impacts by route alternative or segment is not necessary, as there would be no segment-specific impacts or variables; all minor impacts and associated mitigation measures are listed above. In addition, no site-specific construction specifications have been developed.

Summary Comparison of Route Alternatives

TABLE 3.12-4: SUMMARY COMPARISON OF IMPACTS BY ALTERNATIVE

Impact	Crescent Valley (a)	Crescent Valley (b)	Pine Valley (a)	Pine Valley (b)	Buck Mountain
Impact Air-1: Construction-Related Air Emissions	X	X	X	X	X
Impact Air-2: Operational emissions associated with maintenance surveys of the lines and towers may produce CO, PM_{10}, NO_X, and VOC emissions	X	X	X	X	X

RESIDUAL IMPACTS

After mitigation, there may be minor residual impacts to the air quality. Depending on weather conditions and proximity of sensitive receptors, PM_{10} dust may cause temporary health and nuisance impacts. The exact nature of the residual impacts would also depend on the routes chosen, the amount of off-road travel, and land disturbance associated with specific construction activities. The centerline road would not be a public roadway and would be used only for the maintenance and inspection of the proposed facilities. For this reason, the residual air quality impacts related to addition off-highway vehicle use are not anticipated to be substantial.

The completed COM Plan will contain detailed mitigation measures requiring SPPC to make every effort to restore disturbed areas to pre-construction conditions. The COM Plan would also contain specific mitigation for re-vegetation of disturbed areas, as well as watering down exposed stockpiles. The COM Plan would also include monitoring protocols to ensure compliance with the mitigation measures. Any residual impacts associated with construction activities would be minimal due to compliance with the COM Plan and specific mitigation measures associated with Mitigation Measure Air-1.

NO ACTION ALTERNATIVE

Under the No Action Alternative, air quality impacts associated with this project would not occur. However, air quality impacts could occur in other areas as SPPC and the Nevada PUC would begin emergency planning efforts to pursue other transmission and/or generation projects to meet the projected energy shortfall.

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